

Parker Mountain Sage Grouse Project Progress Report

July-September, 2002

10-03-02 Narrative

Radio-collared Hens

To review, 19 out of 24 hens initiated nests this spring. Approximately half the nests were built under Black Sagebrush (*Artemisia nova*) and half under Big Sagebrush (*Artemisia tridentata*). The mean shrub cover was 30%.

Eleven of the 19 hens successfully hatched. The survival of the broods varied (only 10 were consistently located). As graphed (see Graph 1), two broods survived less than 3 weeks, three broods were still with the original hen between 3 and 6 weeks, and 5 broods were still with hens after 6 weeks.

Most of the hens nested at the elevations of Hare lake and quickly moved their broods up in elevation after hatching. They seemed to be holding tightly to drainages with their movements. We assume this is a result of the extremely dry conditions and lack of sufficient grasses and forbs. Most hens, with or without broods, were in the higher elevations (Lost Springs area) at least three weeks earlier than last year. Again, we attribute this to the unusually dry conditions. There was one hen with a brood that dropped into the Antimony area (Grass Valley).

For the first time this year, we made an exerted effort to record any random, unmarked broods we came across while on the mountain. We did this to compare the average number of chicks in a brood to the average number of chicks we were observing with our collared hens. In this way, we would be able to determine how accurate our chick survival estimates were in representing all the broods on Parker Mountain. All in all, we observed 61 random broods with an average brood count of 4.5 chicks per hen.

Experimental Treatments

This summer marked the completion of the two-year, post-treatment monitoring we set forth to do for the chemical treatment (Spike). Comparing the Spike treatment plots to the controls, we do not see any significant difference. Both the control and the Spike plots displayed a decrease in general grass/forb abundance (see Graph 2). We attribute this decrease primarily on the drought. Due to the drought, two growing seasons may not be an adequate period of time to determine if there was a definitive understory vegetation response. There was a slight change in the grass/forb abundance in the controls and the Spike plots. In 2000, the herbaceous understory component was slightly higher in the control plots. Then, in 2002, the herbaceous understory component was slightly higher in the Spike plots versus the control plots (see Graph 3). One could speculate that this may be a pattern emerging showing a positive response to the Spike treatment. In which case, further monitoring is necessary in the ensuing years to document this response.

The mechanical treatments, the Lawson Aerator and Dixie Harrow, were completed the fall of 2001. This summer we sampled the herbaceous understory in all the plots and compared those findings with the control plots. We sampled in both June and July to measure the relative abundance of herbaceous understory vegetation available to hens and broods during the early and late brood-rearing periods. We compared the abundance of understory grasses and forbs in each type of plot by month (see Graph 4). In June, the Dixie and the control plots had around 16 % herbaceous understory while the Lawson Aerator was only at 6 %. In July, the Spike plot grass/forb component remained around 16 %. The Lawson plot grass/forb component increased

significantly from 6 % to 12 %. The control plots are the only plots that decreased in grass/forb components (16 % to 6 %). We hypothesize that the Dixie plots were able to respond early in the spring because they were seeded. The Lawson Aerator plots still had quite a bit of disturbance in June from the treatment. In July, we assume the herbaceous understory vegetation was able to re-establish and respond to the sagebrush thinning.

Rabbit Exclosures

This summer we proceeded to completely construct rabbit exclosures on all of the mechanical, chemical and control plots. To review, the rabbit exclosures were constructed to measure the amount of herbaceous understory being removed by lagomorphs. The exclosures are three square plots, each 16 x 16 feet in size. The squares are all adjacent with the first one being completely open to all herbivores. The second square is closed to only large herbivores (open to rabbits). The third square is closed to large herbivores and rabbits.

The control exclosures did not show any significant pattern. Although, the September data did show an increase in forb component from the open to the rabbit-proof plots (see Graph 5).

The Spike exclosures exhibited more of the pattern we expected to see. The open plots were consistently lower in grasses and forbs than the closed and rabbit-proof plots. Then, in September, we again see an increased grass/forb component going from the open to the rabbit-proof plots (see Graph 6).

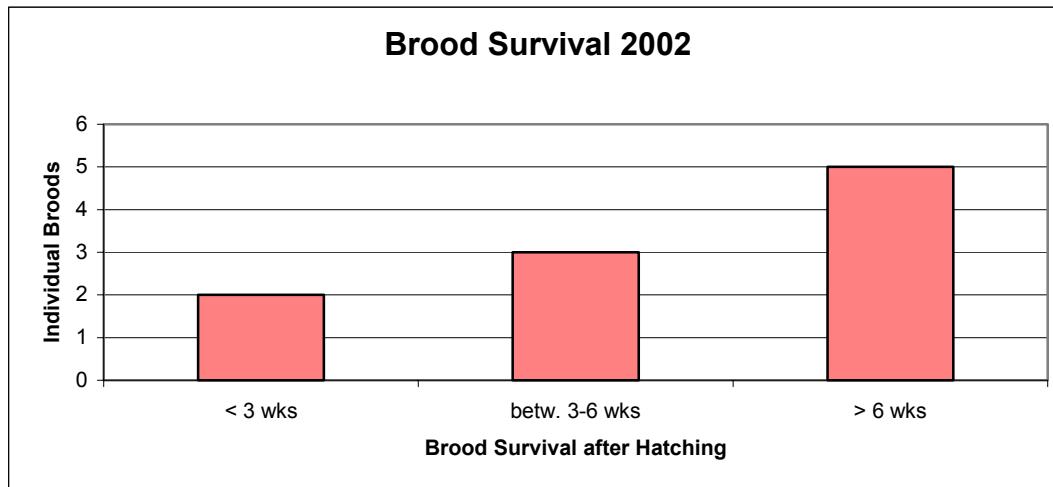
The Dixie Harrow exclosures most clearly exhibit the impact that rabbit herbivory can have on the herbaceous understory vegetation. Looking at September, both the plots open to rabbit herbivory are extremely low. The only plot with grasses and forbs is the rabbit-proof plot (see Graph 7).

The Lawson Aerator exclosures did not show quite the significant pattern in September as the other treatments but does still exhibit some affect (see Graph 8).

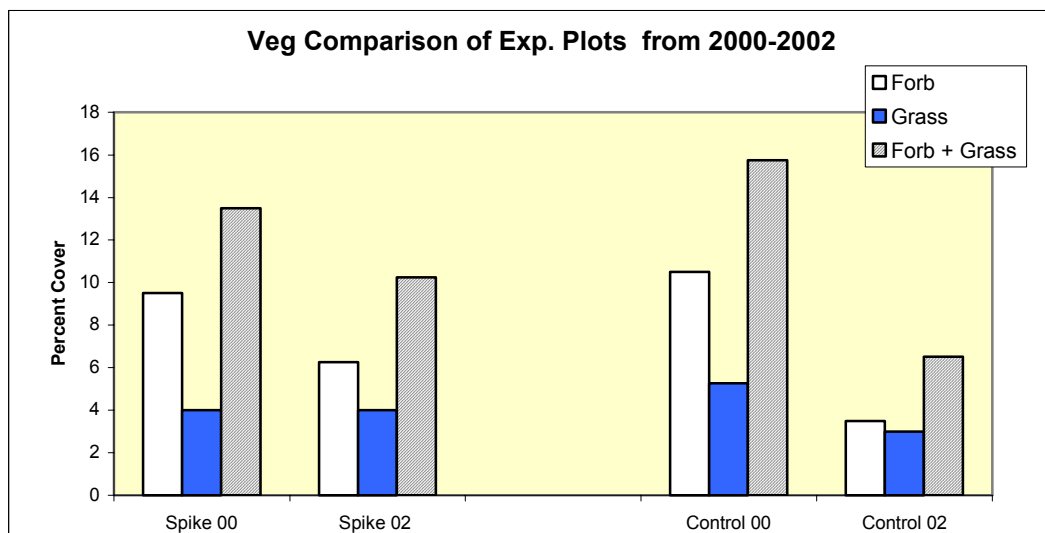
The month of September was consistently showing a pattern of lower herbaceous understory vegetation in the open-to-rabbit plots versus the rabbit-proof exclosures. As the rabbits offspring mature over the course of the summer, the rabbit herbivory increases. This was evident in our experimental exclosures. We will continue to monitor these exclosures next year to support this year's findings.

GRAPHS:

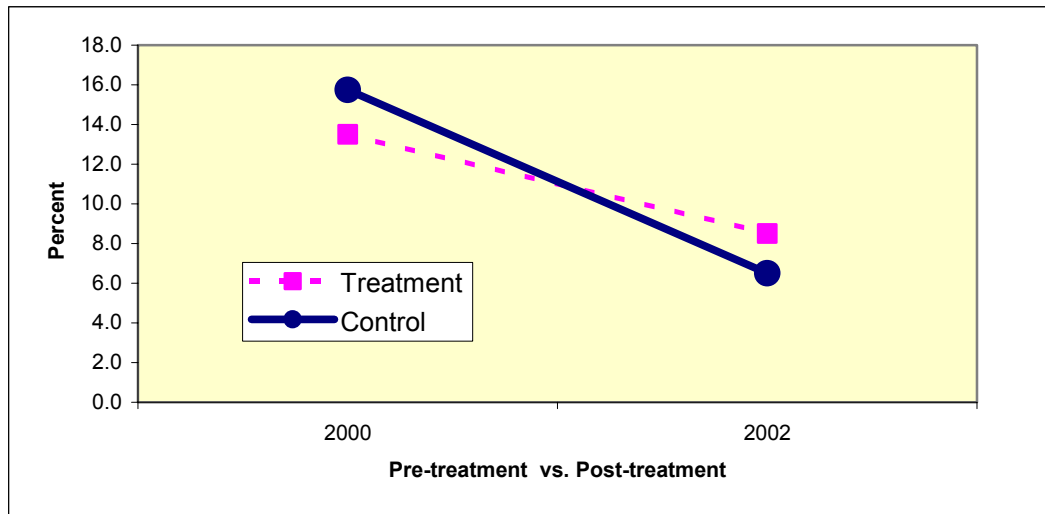
Graph 1. Brood survival of our collared hens was very good this year.



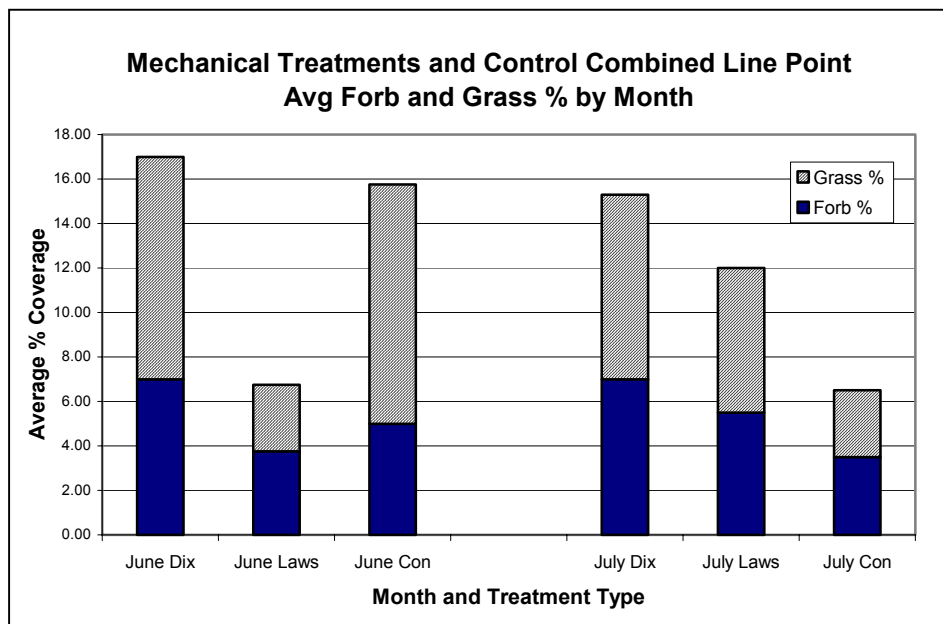
Graph 2. Both the Spike and the control plots exhibited a decline in grass/forb component. We attribute this to the drought this year.



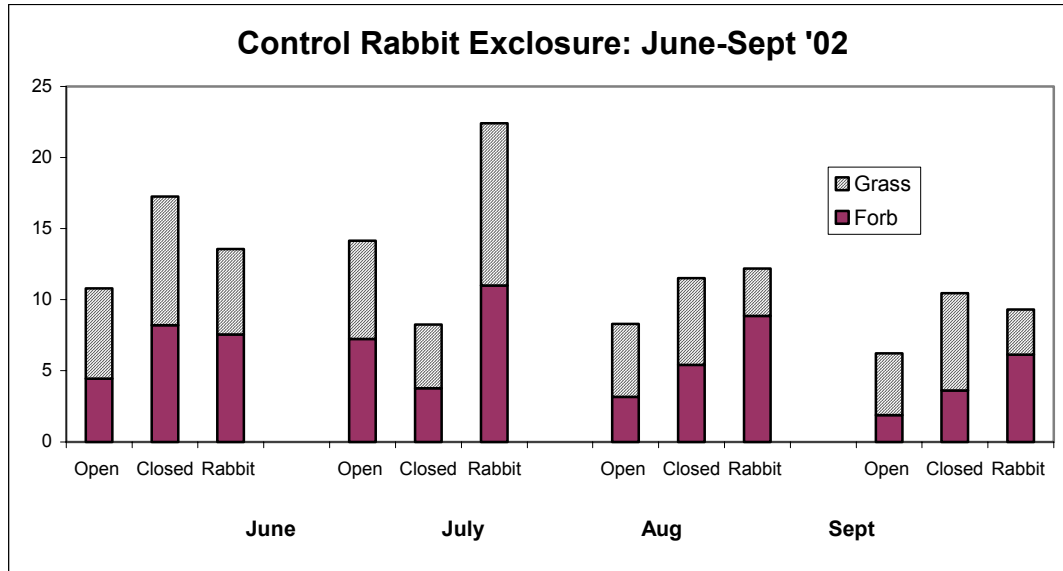
Graph 3. Mean decline in herbaceous understory: Control vs. Spike



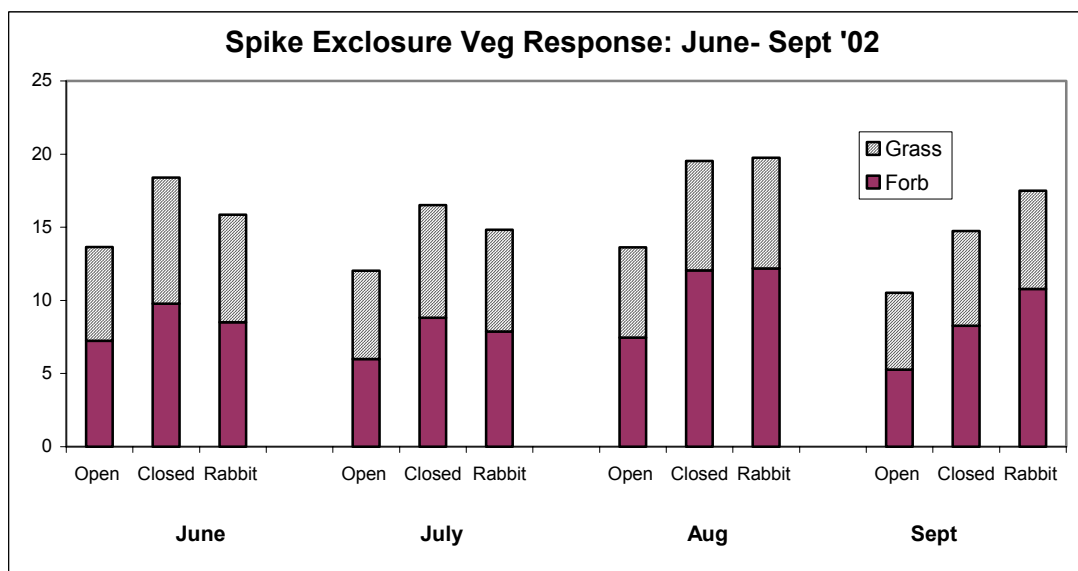
Graph 4. Comparison of Dixie Harrow, Lawson Aerator, and control plots in June and in July. Notice the significantly higher July grass/forb components in the treatments vs. the July control plots.



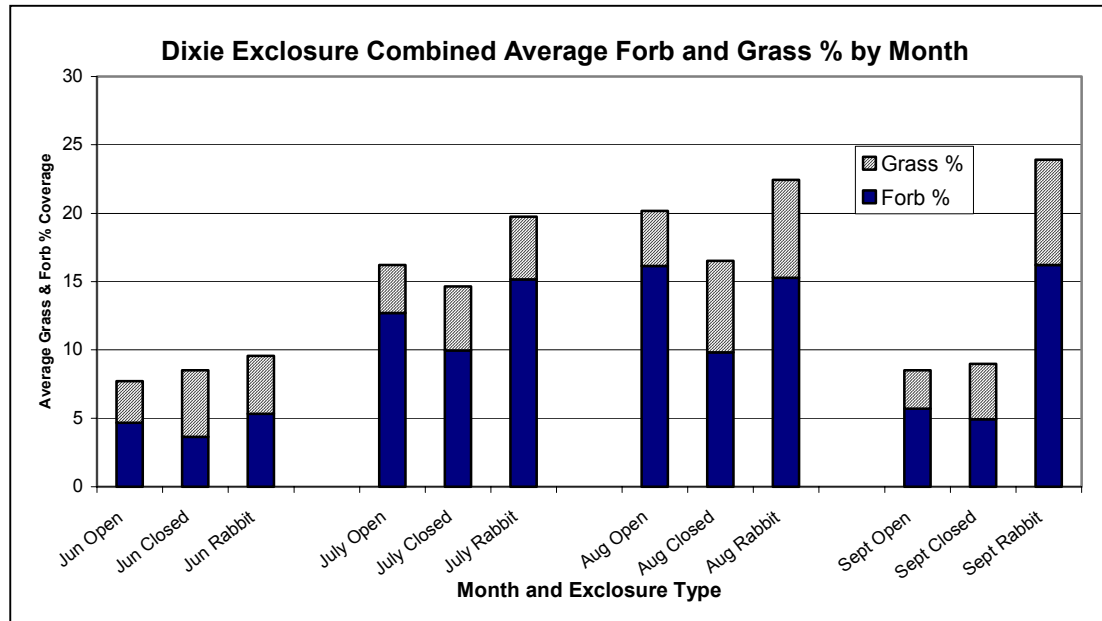
Graph 5. The September forb data shows what we would expect with increasing increasing forb component from the open to the rabbit-proof squares.



Graph 6. September shows the expected pattern of increasing grass/forb component as you go from the open to the rabbit-proof plots.



Graph 7. The impacts of rabbit herbivory are extremely pronounced in the Spike exclosures.



Graph 8. The Lawson exclosures showed a slight rabbit herbivory affect in August and September.

